



Advanced Training in Mathematics Schools

Supported by National Board for Higher Mathematics

**Advanced Training School for Lecturers in
Differential Geometry & Measure Theory**

Venue: Department of Mathematics, IIT Bombay

June 8 - 27, 2009

Convener: **Inder K. Rana**

Brief description of ATM Schools:

Advanced Training in Mathematics (ATM) Schools are a joint effort of more than 50 active researchers across the country with support from the National Board for Higher Mathematics. The programmes are conducted in reputed mathematics departments in summer and winter each year. In these Schools, the emphasis will be on problems solving and on highlighting inter-relations of basic subjects in mathematics. The schools are offered mainly for Ph.D. students and lecturers. Presently we invite applications for participation in

ATM School for Lecturers in Differential Geometry & Measure Theory

Brief description of the school: This program is meant for Lecturers in Colleges and Universities who do teaching of postgraduate courses in Measure theory & Differential geometry. In this school the following topics will be covered: 1. Measure and Integration: Riemann Integral and its deficiencies, Extension theory and construction of Lebesgue Measure, Lebesgue integral and its properties. Measure and Integration on Product spaces.

2. Differential Geometry: Evolution of the notion of curvature, Parametrized Curves in E^2 , Frenet-Serret Equations, moving frames, First and Second Fundamental Forms for a surface in E^3 , Euler's theorem on normal curvature, Mean and Gaussian curvatures, Theorema Egregium, classification of compact surfaces (discussion), idea of a manifold.

Two applications to complex analysis: i) Hyperbolic geometry and Schwarz's lemma, ii) Weierstrass representation for a minimal surface in E^3 .

Eligibility for participation:

Applications are invited from lecturers in mathematics who have passed NET/SET or equivalent examination and who are teaching at a college/university. Students doing M.Phil. may also be considered for the school. Teachers below the age of 30 will be given preference.

Financial Support:

Selected participants will be paid III-AC return train fare from their place of work/home town to the venue by shortest route and provided with accommodation and local hospitality.

How to Apply:

The syllabus, applications form and other information about the programme is available on the websites:

<http://www.bprim.org/atm>

Applications may also be made on plain paper, giving the following information:

Name, Date of Birth, Age, Gender, Institute/Department, Areas of interest, Address for correspondence, email address, City, State, Pincode, Academic Record: B.Sc./M.Sc. with names of the Institutes, additional information (if any). These should be attested by Head/Principal of the institute.

Completed application forms should reach

Prof. Inder. K. Rana

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Department of Mathematics, IIT Bombay,
Powai, Mumbai 400 076.

e-mail: ikrana@iitb.ac.in

Phone: (O) 022-2576-7462 , (R) 022-2576-8462

Fax: 22-25723480

by **Saturday, 4th April, 2009**. List of selected candidates will be posted on the websites of ATM Schools on **Wednesday, 8th April, 2009**.

Resource persons

R. S. Kulkarni	I.I.T., Bombay
Sudeb Mitra	City Univ. of New York
Inder K. Rana	I.I.T., Bombay